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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/528,055

12/07/2005

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Q76674

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23373 7590 08/04/2009
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EXAMINER

SMITH, JENNIFER A

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

08/04/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/528,055	Applicant(s) MIZUKAMI, HIROSHI	
	Examiner JENNIFER A. SMITH	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 July 0209.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-13 is/are pending in the application.
- 4a) Of the above claim(s) 3-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Application

Claim 1 has been amended.

Claims 2 and 14 have been canceled.

Claims 3-13 remain withdrawn.

Claim 1 is presented for examination.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claim is indefinite for failing to define all of the parameters of the claim. It describes a system of two equations with four unknown parameters (T1, T2, A and B). The application does not contain any examples to claim 1 to explain the predetermined firing furnace or the predetermined conditions for obtaining the constants - A and B.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Uchino et al. (Japanese Patent Publication 2003-082333).

Uchino et al. teach a cerium oxide abrasive material and method of production. A rare-earth (cerium) carbonate is fired at a temperature between 400-800°C [See Paragraphs 0003 and 0044]. The fluorine content is taught in the Abstract is less than 3 wt% relative to the rare earth oxide wt % (0.005-0.5). This equates to a value of 150-15,000 ppm. Values of fluorine in the low end of this range are disclosed in the tables in the Uchinio reference. The range of specific surface area in the abrasives produced in

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the Uchino reference is from 3-30 m²/g [See Paragraph 0019]. The Uchino reference teaches firing the rare-earth (cerium) carbonate at a temperature between 400-800°C [See Paragraph 0044]. The prior art ranges encompass the temperatures of new claim 14. In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP 2144.05 I.

Uchino et al. teach fluorine content, firing temperature, and surface area of the various examples in the Experimental Tables. A relationship exists between the fluorine content and temperature. Firing temperature is generally higher in examples utilizing a material with a smaller fluorine content value and one would be motivated to operate under similar conditions as those disclosed by Uchino to obtain the appropriate abrasive composition.

The Uchino reference does not teach a formula for setting the firing temperature but the temperature ranges 400-800°C and fluorine concentration of 150-15,000 ppm taught in the Uchino reference are consistent with the teachings of the instant specification and while the reference is silent as to the preferred method of choosing the temperature, one of skill in the art would be motivated to perform firing of the cerium carbonate at the ranges disclosed by Uchino et al based on the range of specific surface area in the abrasives produced in the Uchino reference - from 3-30 m²/g. This

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represents optimization within the prior art conditions through routine experimentation. Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). See MPEP 2144.05 IIA.

Response to Arguments

Applicant's arguments filed on 06/02/2009 have been fully considered but they are not persuasive.

Applicants argue, with respect to the 112 2nd Paragraph rejection, the two constants - A and B - are predetermined from the two formulae (2) and (3), by determining optimum firing temperatures for two cerium carbonates different in fluorine content. Looking to the specification to equate these values, "A" is generally 30-90 and the value "B" is 10 to 14 [See Page 11, lines 14-15]. These values are not constants and depend on the choosing of arbitrary values of temperature and fluorine content based on an unspecified relationship with the specific surface area of a subsequently obtained cerium oxide. Claim 1 fails to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Applicants argue the roasting temperature in Tables 2 and 4 are outside the firing range of claim 1 and paragraph 0035 teaches away from a roast temperature less than 800°C. The Uchino reference broadly discloses a range of 400-800°C, motivation to stay in this range is disclosed in paragraph 0044 of the Uchino reference and Applicant's arguments are directed to the Examples in the Uchino reference. The Examiner respectfully points out that a patent's disclosure is not limited to its examples. "The use of patents as references is not limited to what the patentees describe as their own inventions or to the problems which with they are concerned. They are part of the literature of the art, relevant for all they contain." In re Heck, 699 F.2d 1331, 1332-33, 216 USPQ 1038, 1039 (Fed. Cir. 1983) (quoting In re Lemelson, 397 F.2d 1006, 1009, 158 USPQ 275, 277 (CCPA 1968)). A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art, including nonpreferred embodiments. See MPEP 2123 [R-5]. The prior art of record discloses and/or suggests the ranges claimed by the Applicants. One skilled in the art could have reasonably selected and optimized the claimed properties from the prior art in such a firing process.

Conclusion

Claim 1 is rejected.

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER A. SMITH whose telephone number is

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(571)270-3599. The examiner can normally be reached on Monday - Friday, 8:30am to 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571)272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J.A. LORENZO/

Supervisory Patent Examiner, Art Unit 1793

Jennifer A. Smith

July 30, 2009

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JS